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## Legacy - February 2010

South Carolina Institute of Archaeology and Anthropology--University of South Carolina

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# Legacy

South Carolina Institute of Archaeology and Anthropology

## Focus of New South Carolina Maritime Archaeology Book

By Carl Naylor

Several years ago, I realized that other than the raising of the Confederate submarine *H. L. Hunley* most persons knew little about maritime archaeology in South Carolina. To remedy this, I decided to write a book about projects the Institute's Maritime Research Division have conducted over the past 20 years.

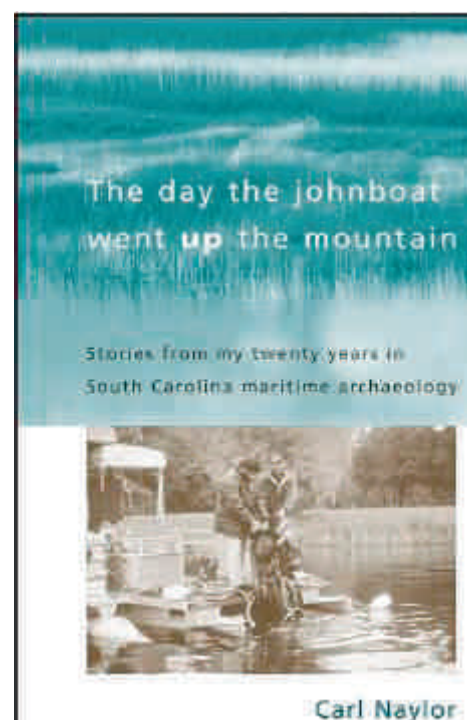
The result, *The Day The Johnboat Went Up The Mountain: Stories from My Twenty Years In South Carolina Maritime Archaeology*, was released in February 2010 by the University of South Carolina Press.

The book recounts tales of dredging the bottom of an Allendale County creek for evidence of the earliest Paleoindians, exploring the waters off Winyah Bay for a Spanish ship lost in 1526 and the waters of Port Royal Sound for a French corsair wrecked in 1577, studying the remains of the historic Santee Canal near Moncks Corner, and searching for evidence of Hernando de Soto's travels through South Carolina in 1540.

The book also describes the division's investigations of suspected Revolutionary War gunboats in the Cooper River, a colonial and Revolutionary War shipyard on Hobcaw Creek, the famous

Brown's Ferry cargo vessel found in the Black River, a steamship sunk in a storm off Hilton Head Island in 1899, the Ingram wreck in the Pee Dee River, our survey of the waters around Callawassie Island, and a mysterious cargo site in the Cooper River.

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# Director's Note

By Charles Cobb  
SCIAA Director

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Every archaeologist's nightmare is the closing scene of the first *Indiana Jones* movie, where a forklift carries a crated Ark of the Covenant to its final resting place within a huge warehouse of identical crates. What really does happen to all of the literally thousands of artifacts that are unearthed annually in South Carolina? I think one of the little known tasks of SCIAA among the public is our curatorial responsibility. In this issue of *Legacy*, I would like to broach this subject, in part because of the enormous research potential of excavated collections, and in part because of a so-called "curation crisis" facing most artifact repositories in the United States today.

South Carolina Law directly charges SCIAA with the "curation of the archaeological collections of the State." The same statute assigns these duties specifically to the State Archaeologist, Jonathan Leader. All states that I am aware of have archaeological repositories, although how they are organized and who oversees them vary widely. Some are affiliated with universities, some with state agencies, some are even private.

All SCIAA research generates collections, but by far the bulk of the artifacts housed in our curation building

come from the large number of publicly funded archaeology projects being carried out around the state. This work is based on a framework of state and federal acts protecting cultural resources. Much of that is carried out by private firms, many but not all of which have their main offices in South Carolina. Collectively, this work over the past few decades has led to enormous advances in our understanding of South Carolina history, ranging from the nature of human adaptations at the end of the Ice Age to the impacts of industrialization in the 20<sup>th</sup> century. These advances have come at a logistical cost, in that they correspond with huge amounts of data pulled from the ground in the form of artifacts and soil samples.

In many respects archaeology shares a premise with other scientific disciplines in that we anticipate (or at least hope) that continuing advances in technology and changing research questions will allow us to revisit old sets of data and extract new kinds of information. So the thousands of square feet of artifacts that we oversee does not represent static space. My own dissertation research relied heavily on collections in the Smithsonian Institution that were excavated in the late 1800s. A large number of archaeological sites were excavated through the Works Progress Administration (WPA) projects of the 1930s, producing some of the most important collections in the Southeast. Although not recovered by modern methods (no screening was used, for instance), archaeologists still continue to successfully mine those materials to broaden our knowledge about the past.

I could probably fill an entire issue of *Legacy* with descriptions of some of the noteworthy archaeological collections that are entrusted to SCIAA. Let me give just one example. In the late 1970s, the U. S. Army Corps of Engineers funded archaeological excavations at the Yaughan and Curiboo plantations in Berkeley County. Much of the work focused on the houses of slaves, and it provided



Charles Cobb, SCIAA Director (SCIAA photo)



an unparalleled perspective on the domestic activities surrounding slave life. Archaeologists were able to glean how activities such as diet, ceramic production, and house construction changed over a period of 100 years—critical sorts of information not to be found in recorded histories. We are now in discussion with the Digital Archaeological Archive of Comparative Slavery, an institution in Virginia, to seek a collaborative grant to rehabilitate these collections and make them more widely available for scholarly study in a digitized format.

This is just a very small snapshot of the enormous research possibilities represented in the SCIAA curation facility. And I have to emphasize that we are fortunate to have a head curator, Sharon Pekrul, who manages to keep this facility in a sense of order that is truly impressive, particularly given our tight resources.

The rapid expansion of public archaeology over the past four decades has placed considerable stress on curation. Buildings nationwide are rapidly running short on space at the same time that they are under pressure to maintain collections in rapidly deteriorating bags and boxes. The primary curation facility in one of our neighboring states has literally run out of space and can no longer accept collections. Some states are now considering what was once considered unthinkable among archaeologists not so very long ago—“de-accessioning” artifacts and moving them out of facilities to free up space for new collections. This places both museum professionals and archaeologists alike in the uncomfortable position of somehow ranking the relative importance of artifacts or collections, thereby creating a triage system of preservation.

Plus, what do we do with the collections we are moving out? Rebury them?

Similar preservation concerns relate to the paperwork generated by an archaeological project. One of my advisors in graduate school used to compare the process of excavating a site—which is inherently destructive—to burning the pages of a unique book. As a result we record our excavations in painstaking detail, with paper forms and photography, so that we can reconstruct that metaphorical book in the laboratory. Students enraptured by the glamour of archaeology through *National Geographic* specials typically are astounded when they take their first field school and discover that they spend almost as much time taking notes as they do digging. Like artifacts, this paperwork is subject to decay and must be preserved for the future through means such as transferal

to archival quality paper and digital reproduction. This places further logistical burdens on curation facilities.

SCIAA is not immune to these issues. Our curation building on campus is nearing capacity, and we continue to seek options to expand. We also hope to integrate more research space alongside the storage space to provide scholars ample room to pull out and analyze collections on-site, which is currently not possible. One model for a curation facility that I am attracted to was implemented in 1998 with the completion of the Maryland Archaeological Conservation Laboratory. Not only is room plentiful for artifacts and researchers alike, but the building also has the meeting space for viewing collections by school groups and other visitors with an interest in Maryland’s past.

One of my visions for SCIAA is to provide more opportunity to acquaint the public with the important and fascinating results of research being carried out by the many talented public and private archaeologists in the state, who I know share in this vision. Our ability to improve and expand our curation facility would be a terrific means for achieving that goal.

## NEW BOOK, From Page 1

In addition, there are chapters on the division’s Sport Diver Archaeological Management Program, the wildlife we encounter during our projects, how we find shipwrecks, working with salvage divers, dugout canoes, the Cooper River Anchor Farm, and more.

According to one reviewer, Roger C. Smith, underwater archaeologist with the Florida Division of Historical Resources, “Naylor has skillfully woven throughout this narrative humorous anecdotal tales with well-researched historical facts and archaeological lessons as he recounts and interprets his journeys through South Carolina’s heritage. Readers will enjoy the trip and learn a great deal in the process.” I couldn’t have said it better myself.

Any group wishing a talk with power point presentation on the book can contact me at 843-762-6105 or canaylor@sc.edu.



The SCIAA Curation Facility. (Photo by Jonathan Leader)

# Savannah River Research

## Carolina Bay Volunteer Research Program

By Christopher R. Moore, Savannah River Archaeological Research Program; Mark J. Brooks, Savannah River Archaeological Research Program; Andrew H. Ivester, Department of Geosciences, University of West Georgia; and Terry A. Ferguson, Department of Environmental Studies, Wofford College

Over the last year, the integration of archaeological research and public outreach has been achieved at the Savannah River Site (SRS) through the establishment of the Carolina Bay Volunteer Research Program. This research involves utilizing dedicated avocational archaeologists, collectors, and the interested public in an ongoing and systematic study of Carolina bays. Both specific site-level research at Flamingo Bay (on the SRS) and more general regional-level studies of Carolina bays in surrounding counties will provide high resolution archaeological and geological data from a single bay and a comparative database for regional bay variability.

Carolina bays are shallow, oriented (NW-SE in the Carolinas), and elliptically-shaped ponds that occur in large numbers throughout the Coastal Plain portion of the South Atlantic Slope (Fig. 1). Several hundred thousand bays are thought to exist between Maryland and northern Florida, with the greatest concentration

occurring in the Carolinas and Georgia (Walker and Coleman 1987). Carolina bays often have elevated sand rims composed of fine sand to gravel-sized sediments deposited by high-energy, lacustrine (lake) processes involving shoreface (water-lain) and eolian (wind-blown) sedimentation (Brooks et al. 1996).

If eolian and shoreface sedimentation occurred over the course of the Holocene under varying climatic conditions, then the potential exists for prehistoric occupations to have been buried and preserved. Thus, these geologic deposits represent a "time-capsule" for understanding the

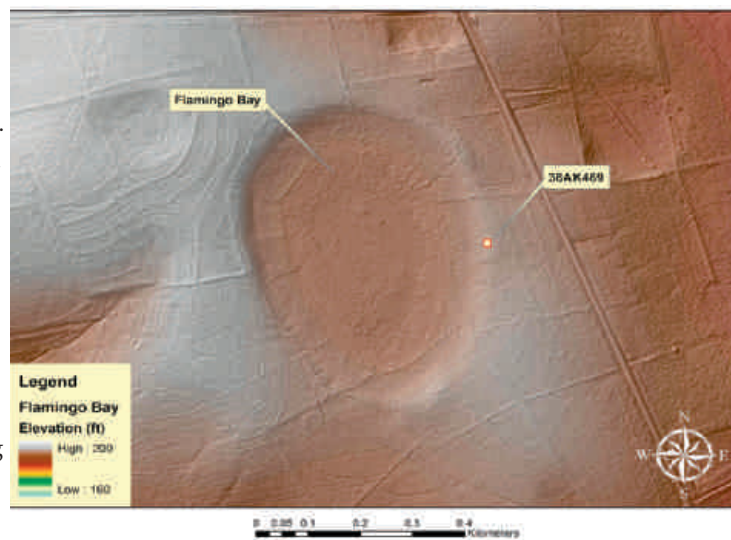


Fig. 2: LiDAR digital elevation map of Flamingo Bay (38AK469). (Figure produced in ArcGIS by Christopher Moore)

archaeological record of the Coastal Plain and serve as a proxy for understanding climate change and cultural adaptation.

The most recent cosmic impact hypothesis for the origin of Carolina bays has been advanced by Firestone et al. (2007). These authors further hypothesize the impact as a mechanism for explaining the Younger Dryas (YD) cold period (ca. 12,900-11,500 calendar years BP), megafauna extinctions, and the demise of Clovis culture at the end of the last ice age. Our data, however, demonstrate that Carolina bays were formed by high-energy lacustrine processes over lengths of time far greater than the onset of the YD and that bay evolution is a long-term process rather than a synchronous event (e.g., Brooks et al. 2001; Ivester et al. 2002).

In addition to meeting our objectives for engaging the public, this long-term Carolina bay study by the Savannah River Archaeological Research Program (SRARP) addresses four basic research objectives: 1) determining the age, origin, and evolution of Carolina bays; 2) delineating prehistoric cultural activities and site formation processes on Carolina

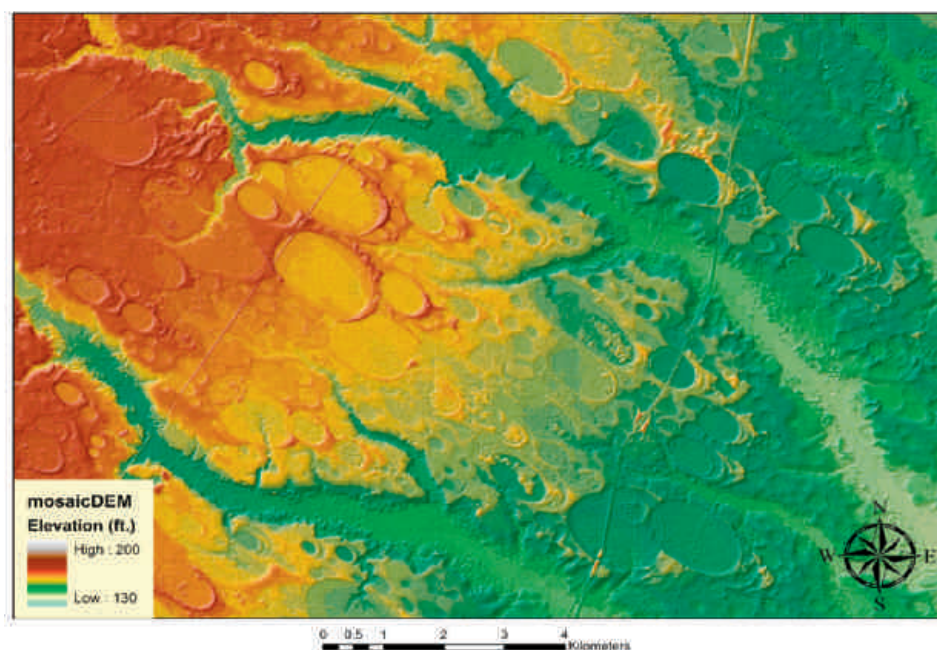


Fig. 1: LiDAR digital elevation map of Carolina bays in Southeastern North Carolina. (Figure produced in ArcGIS by Christopher Moore)



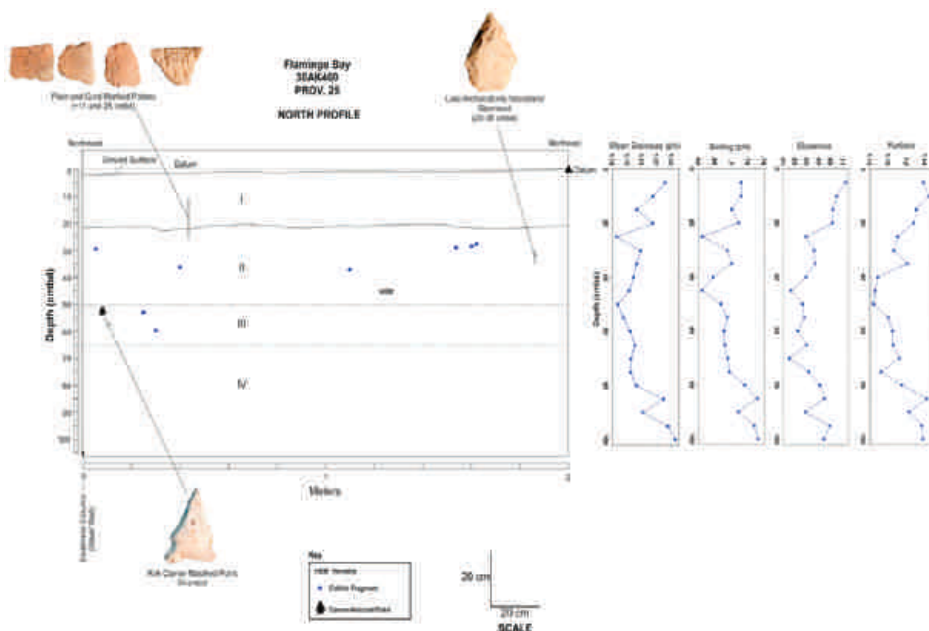


Fig. 3: Artifact backplot of piece-plotted artifacts from Flamingo Bay (PROV. 25) along with grain size data for interpreting site formation processes. (Figure produced by Christopher Moore)

bay sand rims; 3) determining the role of Carolina bays in prehistoric settlement systems; and 4) exploring linkages at Carolina bays between climate change, depositional processes, and prehistoric adaptations. In addition to the ongoing baseline investigations at Flamingo Bay on the SRS (e.g., Brooks et al. 1996; Brooks and Taylor 2003), a body of comparative data was obtained this year from fairly intensive investigations at Frierson Bay near Blackville, South Carolina, and Johns Bay near Allendale, South Carolina. Below, we describe preliminary results of geoarchaeological research on Carolina bays in Aiken, Allendale, and Barnwell counties, South Carolina.

### Flamingo Bay (Aiken County)

At Flamingo Bay, investigations continued this year at site 38AK469, situated on the bay's east-central sand rim (Fig. 2). Volunteers for this excavation included DOE intern Jennifer Stevenson, SRS employee Dennis Hendrix, and long-time SRARP volunteer Jill Nazarete. Several Early Archaic activity areas, or possibly discrete, small-scale occupations were identified earlier through systematic close-interval testing (Brooks and Taylor 2003). The major site-level goal is to derive a better understanding of site activities and how these small-scale Early

Archaic hunter-gatherer societies were organized—in this case with respect to the use of Carolina bays. However, because most behavioral interpretations are based on artifact patterning, it is necessary to first differentiate between the natural and cultural processes that collectively formed the archaeological record. This



Fig. 4: Andrew Ivester (Department of Geosciences, University of West Georgia) collecting sediment samples for micromorphology. (Photo by Christopher Moore)

is particularly critical when dealing with shallow, sandy, multicomponent Coastal Plain sites with no visually observable depositional stratigraphy. While many sites in the Coastal Plain appear to be bioturbated with mixed or conflated artifact assemblages, it is apparent from

previous work on Carolina bay sand rims in South Carolina (e.g., Brooks et al. 1996) and relict source-bordering dune deposits in North Carolina (e.g., Daniel et al. 2008; Moore 2009; Seramur and Cowan 2002; Seramur 2003) that sandy sites like these may contain stratified cultural deposits with valuable cultural and paleoenvironmental information.

Previous shovel testing and test unit excavations at Flamingo Bay (Brooks and Taylor 2003) have established the presence of stratified occupations (Fig. 3). With the help of volunteers, recent excavations of a 4 X 4-meter block have revealed evidence for a relatively pure Early Archaic occupation between 50 and 70 centimeters below surface (cmbs) with numerous worked and broken cobbles, hammerstones, unifacial tools, and whole and broken corner-notched points. Although the Early Archaic horizon is shallower than at other bay sites (see Frierson Bay and Johns Bay below), this is explained by the fact that historic land use had effectively deflated the upper ~20-30 centimeters of sand along the sand rim at Flamingo Bay by the middle 20<sup>th</sup> century

(Brooks et al. 1996). Above the Early Archaic horizon we have evidence for likely ephemeral Middle and Late Archaic occupations along with trace amounts of Woodland and Mississippian pottery near the surface.

In an attempt to understand site



Fig. 5: Color-infrared aerial image of Frierson Bay in Barnwell County showing excavation areas and a prominent eastern bay sand rim burying the western edge of a smaller Carolina bay. (Figure produced in ArcGIS by Christopher Moore)

formation processes, all pebbles and stone concretions found during our excavations were collected for analysis. Within the assemblage of pebbles and concretions, we recovered numerous pebble-sized polished stone gastroliths (i.e., gizzard stones)—also in association with the Early Archaic occupation of the site. Notably, we have also recovered charred hickory nut, charred persimmon seed, and wood charcoal in association with Early Archaic occupations. Together, these findings offer a surprising glimpse into the food procurement strategies of early Holocene hunter-gatherers beyond that typically associated with formal projectile points and scrapers. Dr. Robert Yohe (Department of Sociology and Anthropology, California State University) has agreed to examine the gastroliths for protein residue (i.e., immunological analysis) in hopes of identifying specific bird species. This technique has been used successfully to identify blood protein residue preserved within the fractured surfaces of stone tools (e.g., Newman 1994) but to our knowledge has never been attempted on bird gastroliths.

With the present interest in delineating buried occupation surfaces and depositional processes, stratigraphic (vertical) data were emphasized. Grain-size analyses in combination with a consideration of the vertical distribution

of excavation. In the past, ~5-centimeter increments were used, but it is likely that multiple, thin burial events were crosscut. Other sediment data of possible relevance to identifying buried surfaces, for which samples were also collected at finer increments, included soil chemistry, soluble silica, magnetic susceptibility, bulk density, field water content, and optically stimulated luminescence (OSL) dating. In addition, several samples were taken for micromorphology analysis at Flamingo Bay (Fig. 4). With specific reference to OSL dating, refinements were made by reducing the sample collection tube size from 5 centimeter (or larger) to 1.5-2 centimeters, and by shifting from the single aliquot to the single grain technique. This was done in order to test our hypothesis that depositional events along

of artifacts have proven successful in delineating buried occupation surfaces (e.g., Brooks and Sassaman 1990; Brooks et al. 1996). Accordingly, artifacts larger than 2.5 centimeters were point-plotted (larger artifacts are less likely to be displaced vertically due to post-occupational processes, a proposition that will be evaluated by refitting broken artifacts) and a continuous sediment column was collected at 2.5-centimeter increments to the depth

bay sand rims since the late Pleistocene were centimeter-scale events and that use of larger sampling tubes would likely intersect multiple depositional events (e.g., Feathers et al. 2006). A shift to single-grain OSL dating also reflects our increased understanding of site formation processes of shallowly buried eolian and water-lain deposits of lacustrine and fluvial origin within the Coastal Plain (e.g., bay rims, source-bordering dunes, and sand sheets) (Brooks and Taylor 2003; Moore 2009).

## Frierson Bay (Barnwell County)

Frierson Bay is a large (~1.2 kilometers along its long axis and 0.6 kilometers at its widest point), forested bay that contained permanent water until drained in the early 1960s (Fig. 5). Its prominent eastern sand rim, which was the focus of our geoarchaeological attention, has prograded into the western edges of two other Carolina bays immediately to the east. Frierson Bay is located on the property of Dr. John Frierson. We are greatly indebted to John (long-time contributor to the Archaeological Research Trust [ART]) for allowing access to his farm near Blackville, South Carolina. Volunteers for this project were numerous and included Aiken residents Rooney Floyd and Tom Cofer with previous experience at the Topper site. Also included were Aiken resident



Fig. 6: Volunteers Rooney Floyd, Tom Cofer, and Kevin Eberhard excavating at Frierson Bay. (Photo by Christopher Moore)





Fig. 7: A sandstone abrader and side-notched quartz Taylor projectile point from Test Unit 1 at Frierson Bay. (Photo by Christopher Moore)

and long-time SRARP volunteer Kevin Eberhard, along with Danny Robinson (former SRARP employee), and recent graduate Warren Rich (now part of the SRARP field crew) (Fig. 6).

Archaeological survey consisted of shovel testing along the spine of the eastern sand rim—the preferred location of prehistoric settlement at most Carolina bays. East-west shovel test transects were placed across the sand rim at key locations. Virtually all

shovel tests contained archaeological material—primarily Coastal Plain chert debitage in the 40-80 centimeters below surface depth range. All Archaic and Woodland period components were represented; however, like most bays, the Early Archaic seemed dominant. Unlike Flamingo Bay, no particular area appeared to contain noticeably higher densities of material, but this may be due to the larger testing interval at Frierson Bay. Thus, the placement of two adjacent 2 X 2

meter units and one isolated 1 X 2 meter unit was largely arbitrary. One of the 2 X 2 meter units produced an exhausted, Early Archaic quartz Taylor biface at 77 centimeters below datum (Fig. 7), and the 1 X 2 meter unit produced a cache ( $n = 12$ ) of Coastal Plain chert, biface performs, and one quartzite biface between 66 and 69.5 centimeters below surface (Fig. 8). Based on depth range, technology, degree of patination, and presence of thermal alteration, a Middle Archaic affiliation is likely for the cache, although an Early Archaic affiliation cannot be ruled out. Dates from OSL samples collected from this unit should resolve the question. Continuous sediment columns sampled at 2.5 centimeter intervals were taken from one of the 2 X 2-meter units and from the 1 X 2 meter unit. These samples were subsampled for magnetic susceptibility analysis. In total, eight OSL samples were collected from the walls of the same two units at key depths indicated by the archaeological record. At Frierson Bay, 1.5-centimeter diameter OSL sampling tubes were used to reduce the likelihood of sampling across “invisible” depositional boundaries. Soil chemistry, bulk phytolith, bulk density, and field water content analyses will be conducted at Frierson and Johns Bays in the future if the pilot study for these analyses at Flamingo Bay proves fruitful.

## Johns Bay (Allendale County)

Johns Bay is also large (~0.7 kilometer along its long axis and 0.5 kilometer at its widest point) with a prominent eastern sand rim merging laterally into a markedly elevated (~3 meter), broad, parabolic dune-shaped landform on the southeastern bay margin (Fig. 9). The bay basin is open, characterized by low, herbaceous vegetation and an open-water pool (~0.5 hectares) at the south end.

We wish to express appreciation to the landowner, Mrs. Mary Johns, for allowing our field crew and volunteers access to her property for archaeological testing of this prominent bay sand rim. Mrs. Johns, whose house is located on

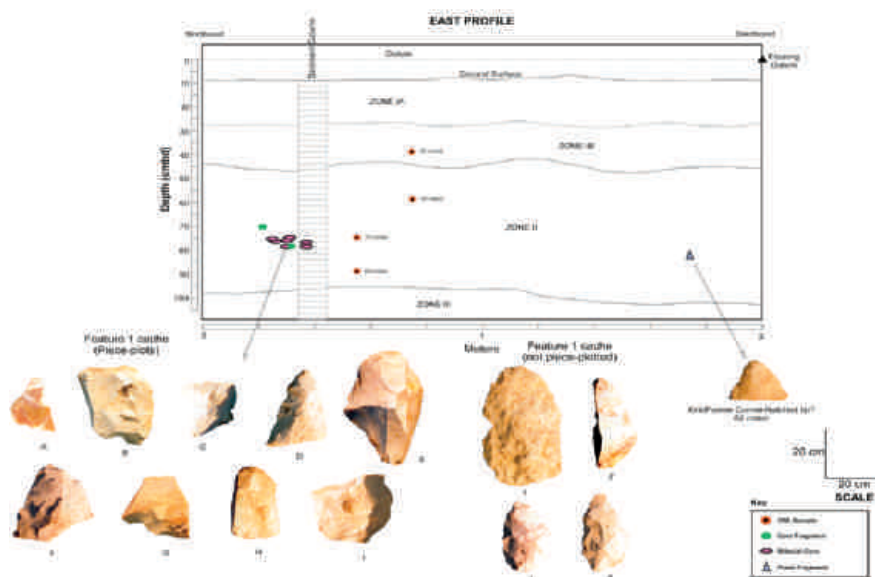


Fig. 8: Artifact backplot of a buried biface cache and likely Early Archaic point tip recovered from Test Unit 3 at Frierson Bay. Note: Sediment column and OSL samples. (Figure produced by Christopher Moore)



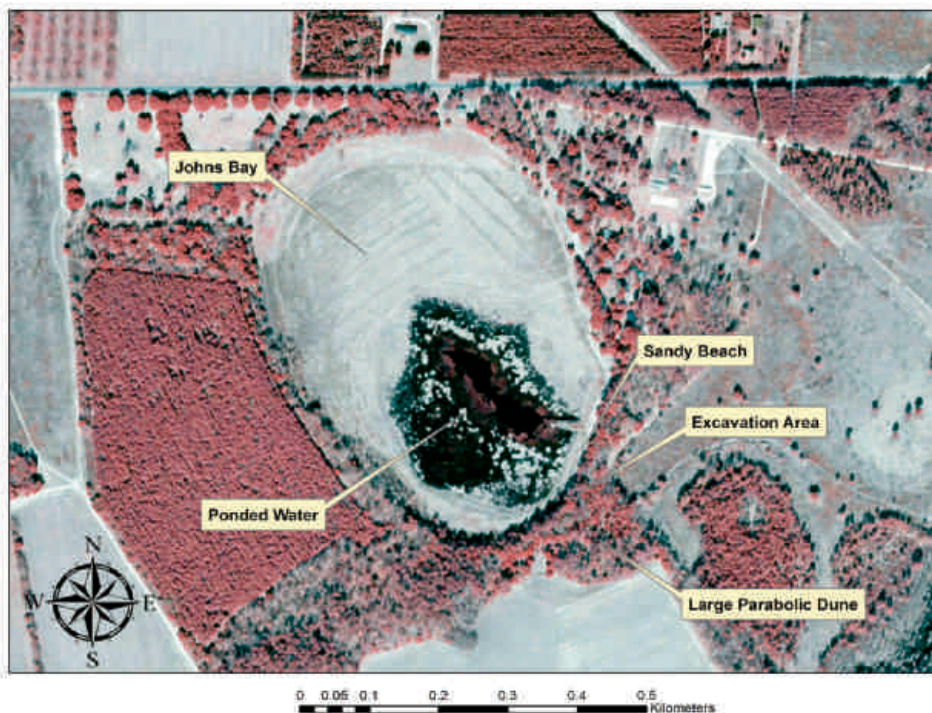


Fig. 9: Color-infrared aerial image of Johns Bay in Allendale County showing excavation areas, ponded water, and a large parabolic dune. (Figure produced in ArcGIS by Christopher Moore)

the northeast portion of the rim, noted that the entire basin was open water until at least 1955 when she remembers people waterskiing. Ms. Johns also noted that the bay was most recently completely inundated in 2003 when the water level was up to her yard. An interesting manifestation of the most recent inundation was the formation of a "clean" white sandy beach along the bays southeast margin. This beach was produced by high-energy wave action reworking the toe of the sand rim, representing former shoreline deposits consisting of both water-lain and eolian components. This is significant because most bays transitioned from high-energy, open-water ponds to low-energy, vegetated wetlands during the mid-Holocene (Brooks et al. 1996), such that sediments became vegetation bound. Under this circumstance, it is hard to explain how Mid- to Late Holocene archaeological materials could be buried on the sand rim if the sediment supply was shut down. As demonstrated by Johns Bay, this can be explained by the episodic, small-scale reworking of existing source-bordering (sand rim) deposits; in this case, the beach sands would be exposed for eolian transport up on to the sand rim

by winds out of the west-northwest once the water level receded and the sediments dried.

Recent work on stratified source-bordering dunes and eolian/fluviol sand sheets along the Tar River in North Carolina suggest burial events at those sites may be associated with periods of rapid climate change and ecosystem instability (Moore 2009). Our work on Carolina bays will address whether or not similar site formation processes are responsible for site burial at the regional level.

At Johns Bay, the parabolic dune-shaped deposits of the southeastern rim were targeted for geoarchaeological investigations. Two areas were selected for archaeological survey, with every shovel test producing cultural material to a depth of one meter below surface. One of these areas contained a fairly dense spatial cluster (~30 X 30 meters), more similar to the archaeological patterning at Flamingo Bay than of that at Frierson Bay. All temporal components appeared to be present, dominated by

Archaic period material with the Early Archaic likely most prevalent.

In the area of highest density of archaeological material, two 2 X 2-meter units were excavated with the help of volunteers including Bob Van Buren of Aiken and Larry Strong from Allendale (Fig. 10). Woodland and Late Archaic materials were recovered immediately below the plowzone, and a small Early Archaic Kirk/Palmer biface of Coastal Plain chert was point-plotted at 80 centimeters below surface in one of the units (Fig. 11). Coastal Plain chert dominated the assemblage; however small amounts of non-local material were present in the Archaic horizons. Possibly relating to proximity to the Allendale chert quarries, the chert debitage from Johns and Flamingo Bays represent the complete range of post-quarry reduction activities, whereas the small chert debitage from Frierson Bay indicates primarily late stage tool reduction and maintenance.

Grain-size, magnetic susceptibility, and OSL samples were collected from one of the 2 X 2-meter units in the manner employed at Flamingo and Frierson Bay. Through coring, basal bay rim OSL samples were also collected from Johns Bay at 165-195 and 255-285 centimeters below surface, just above the Tertiary-aged boundary, to obtain a minimum age for the bay and to document rates of net sedimentation in the vicinity of the excavation units. Although these samples have yet to be dated, previous age



Fig. 10: Johns Bay volunteers Dr. Larry Strong of Allendale and Bob Van Buren of Aiken. (Photo by Christopher Moore)

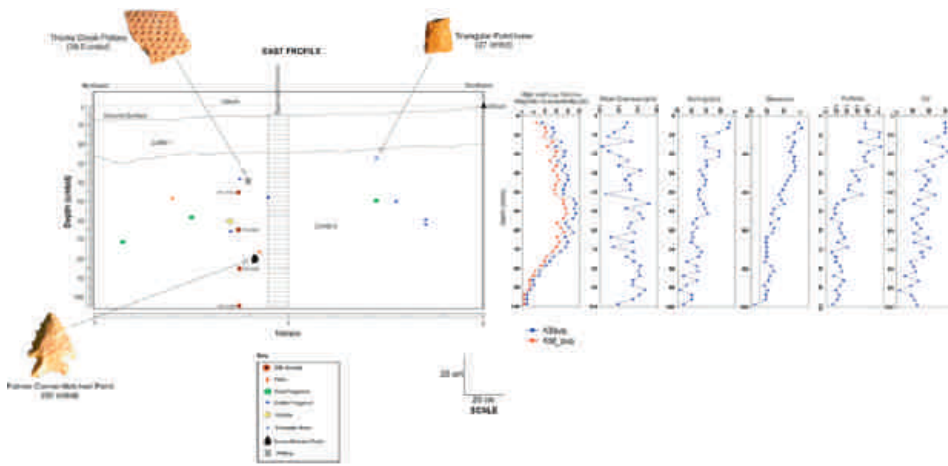


Fig. 11: Artifact backplot of piece-plotted artifacts from Johns Bay (TU 1) along with magnetic susceptibility and grain size data for interpreting site formation processes. Note: Sediment column and OSL samples. (Figure produced by Christopher Moore)

determinations by Brooks et al. (2003) and Ivester et al. (2007) have demonstrated that at least some Carolina bays are in excess of 100,000 years old.

Analyses of artifacts along with sedimentology are currently underway with the help of lab volunteers John Whatley from Evans, Georgia (Fig. 12) and Bob Van Buren from Aiken, SC (Fig. 13). These data along with the results of other specialized geoarchaeological analyses (e.g., soil chemistry, magnetic susceptibility, bulk phytolith, micromorphology, immunological analysis of gastroliths, ethnobotanical analysis, artifact refitting and back-plotting, ground-penetrating radar, and OSL dating) will be presented in future symposia and publications. Cumulatively, these

analyses will allow us to begin to address substantive issues beyond site formation processes and relate cultural occupation of Carolina bays to broader anthropological questions concerning the social organization, complexity, and adaptative strategies of early hunter-gatherers to changing environmental conditions.

Finally, we would like to end by saying that this work would not be possible without the hard work and dedication of our volunteers. Over the next year, the SRARP hopes to expand the Carolina Bay Volunteer Research Program to include more volunteers, both in the

field and in the lab. We also wish to thank board members and trustees of the Archaeological Research Trust (ART) for providing a grant for OSL dating at Flamingo Bay. Additional excavations are planned for the spring and preliminary results

of this work will be presented at regional conferences including the upcoming Archaeological Society of South Carolina (ASSC) Conference and the Southeastern Geological Society of America (GSA) meetings in Baltimore, Maryland.

For more information on the Carolina Bay Volunteer Research Program, please contact Dr. Christopher R. Moore, [cmoore@srarp.org](mailto:cmoore@srarp.org), office: 803-725-5227 or Dr. Mark J. Brooks, [MJBROOKS@mailbox.sc.edu](mailto:MJBROOKS@mailbox.sc.edu), office: 803-725-5221. Donations for this research are accepted through the USC Educational Foundation. If you wish to donate to this foundation, please contact Nena Powell Rice, [ricen@mailbox.sc.edu](mailto:ricen@mailbox.sc.edu), office: (803) 576-6573 or cell: (803) 331-3431.

For a list of references cited in this article, please contact the authors.



Fig.13: Volunteer Bob Van Buren of Aiken, SC, holding a small Palmer point found at Johns Bay. (Photo Christopher Moore)



Fig. 12: Lab volunteer John Whatley of Evans, GA, assisting in artifact analysis. (Photo by Christopher Moore)



# Excavation of the Lawton Site Palisade

By Keith Stephenson, Adam King, and Christopher Thornock

In an effort to place Mississippian period (AD 900 to 1600) sites on the Department of Energy's Savannah River Site (SRS) in a broader and more meaningful context, staff of the Savannah River Archaeological Research Program (SRARP) initiated a long-term research project at the Lawton site (38AL11) in 1999. Lawton is a small Mississippian mound center in Allendale County, South Carolina. The site is approximately three acres in extent and is situated in the floodplain along the bank of a backwater slough approximately 250 meters east of the Savannah River. The most prominent cultural features at Lawton include two platform mounds that are each about three meters in height and referred to as the North and South mounds (Fig. 1). Preserved on the site's northeastern edge is the borrow pit for mound fill. An intact fortification ditch five meters wide and one meter deep encircles the site. An earthen embankment is present along the outer perimeter of the ditch.

In 2008, staff from the SRARP conducted fieldwork at Lawton and

focused on a portion of the remains of a burned and collapsed palisade that once surrounded the site. We initially suspected the presence of a burned enclosure in 1999 when concentrations of fired daub were detected through systematic shovel testing along the interior edge of the fortification ditch, as well as the terrace edge (Fig. 2). In 2007, with funding from the South Carolina Institute of Archaeology and Anthropology's Archaeological Research Trust Fund, Chet Walker of Archaeo-Geophysical Associates, LLC, conducted limited magnetometer surveys at both Lawton (38AL11) and a second mound site nearby, the Red Lake site (9SN4). Magnetometers detect local variations in magnetism that can be caused by soil changes, disturbances, and burning. The goal of the surveys was to determine whether remote sensing techniques could provide information on the structure



Fig. 2: Positive shovel tests containing daub showing density distribution by weight. (Drawing by Adam King)

of Middle Savannah River mound centers. At Lawton, the magnetometer survey revealed clear anomaly patterns on the southern, eastern, and northern interior margins of the fortification ditch. These highly magnetic burned daub concentrations confirmed the presence of what we had interpreted as a palisade wall collapse (Fig. 3).

To investigate the nature of the palisade feature, we excavated a 2 X 4-meter block adjacent to the bluff edge where a high density of burned daub had been identified during systematic shovel testing. Our objective was to verify the presence of a palisade line underlying the daub feature by confirming the presence of patterned postmolds as has been noted at numerous other Mississippian period sites contemporary with Lawton (ca. A.D. 1250 to 1350).

In general, the soil profile at Lawton consists of clay alluvium, a result of overbank flooding, which directly

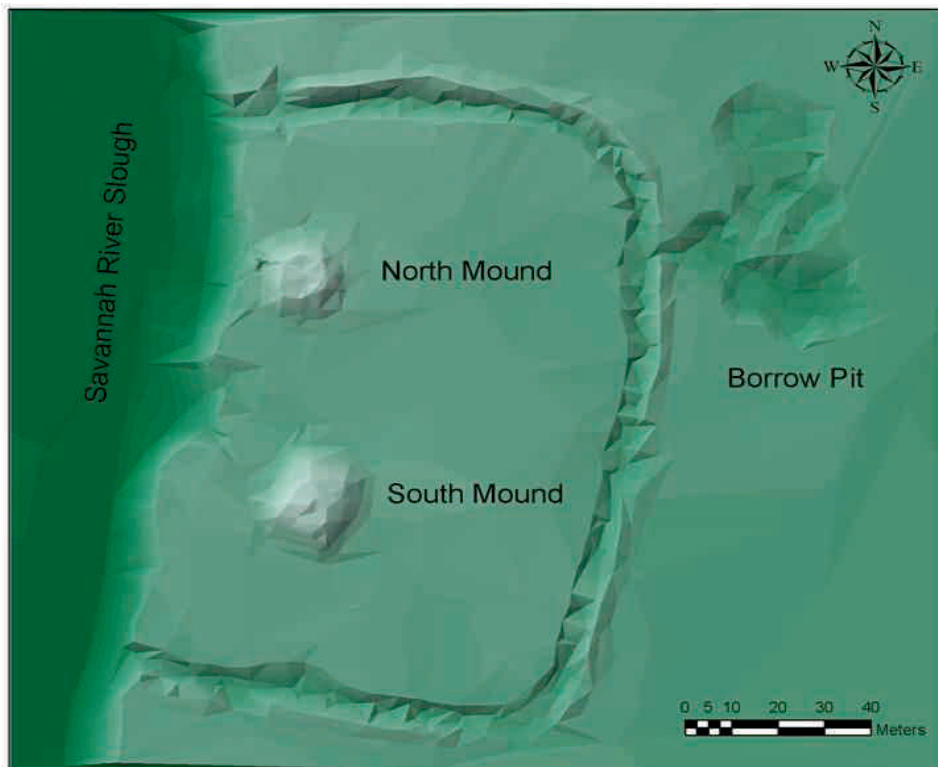


Fig. 1: Isometric view of Lawton site showing visible features. (Drawing by Adam King)

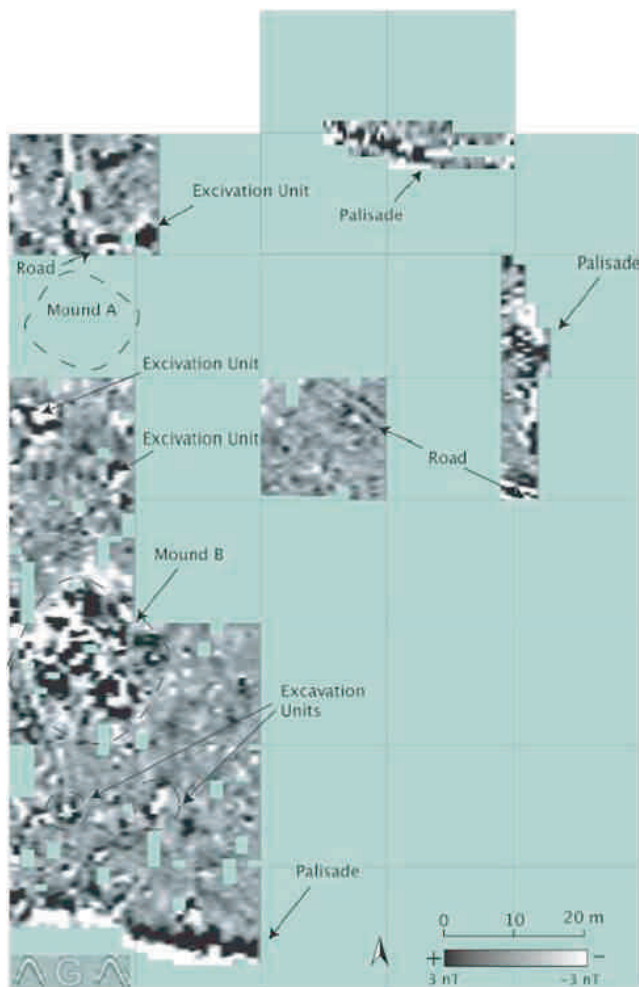


Fig. 3: Interpretation of magnetometer data from the Lawton site. (Figure by Adam King)

overlies midden deposits. Excavation data show little evidence of damage to the Mississippian component at Lawton due to fluvial processes. Characterized stratigraphically, the uppermost soil stratum is represented by a 20-centimeter thick layer of alluvial clay resulting from historic period agricultural practices and subsequent erosion in the Piedmont. Substantial concentrations of burned daub were present in the lower zone of this alluvial deposit. The underlying midden consists of two strata: a 10-centimeter layer of lighter colored mottled sandy-silt overlying a homogenous darker colored layer of sandy-silt extending into the base of the block excavation at 40 centimeters below datum.

The block excavation consisted of eight 1 X 1-meter units (Proveniences 132, 133, 188, 205, 206, 207, 208, and 209) excavated in five arbitrarily defined levels, with Levels A – C dug in 10-centimeter levels and D and E dug in

five-centimeter levels. All soil was screened through ¼-in. mesh, except for the upper portions of the alluvial layer due to its redeposition from an upstream source. The excavation of Level A proceeded with the removal of the upper 10 centimeters of clay alluvium. The lower 10 centimeters of clay alluvium (Level B) contained burned daub concentrations, which were exposed and recorded with scaled drawings. Midden deposits lay directly below the daub concentration. As noted, the midden was a 20-centimeter thick layer (Levels C, D, and E). Removal of this layer revealed a wall trench feature 30-40 centimeters in width running the length of the block excavation (Figs. 4 and 5). The wall trench was evident as a

tan-colored soil feature in a surrounding light brown submidden matrix. Post molds were difficult to discern in the wall



Fig. 4: Palisade trench feature at the Lawton site. (Photo by Adam King)

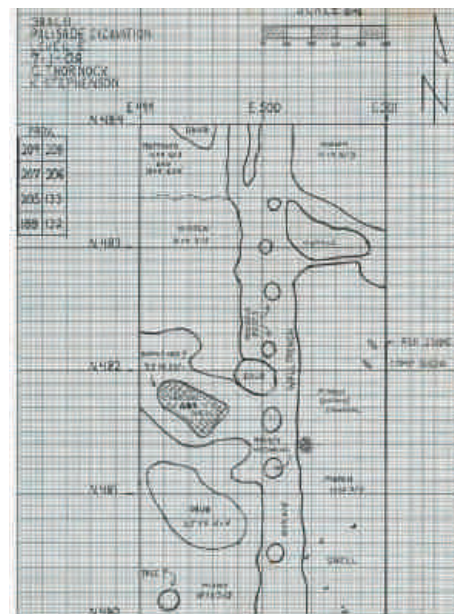


Fig. 5: Plan drawing of the palisade trench feature at the Lawton site. (Drawing by Adam King)

trench, but were perceptible as amorphous light brown stains. The absence of charcoal in the post molds indicates that the wall posts did not burn completely to the ground surface.

To better understand the nature of the wall trench construction, a 70 centimeter-wide slot-trench was excavated along the south block profile. Eventually, we extended this slot trench 1.5 meters northward across the block unit in an attempt to more fully expose the postmolds in plan. In profile (Fig. 6), the wall trench extended approximately 80 centimeters into the subsoil from the base of the alluvial layer. At this depth, the wall trench narrowed from a width of 40 centimeters to about 20 centimeters, where it continued into the base of the slot-trench.

At the base of the slot-trench (110 centimeters below surface), five post molds were exposed in plan, and they were identifiable only as splotchy white-colored soil stains devoid of organics in a tan soil matrix (Fig. 7). The postmolds were 20-30 centimeters in diameter, and they in actuality may be postholes rather than molds with their organic signature having leached through the sandy substrate. These postmolds (or holes) were spaced 15-25 centimeters apart and extended to a depth of 20 centimeters from the base of the wall trench. It is noteworthy that the wall trench cuts through the midden,



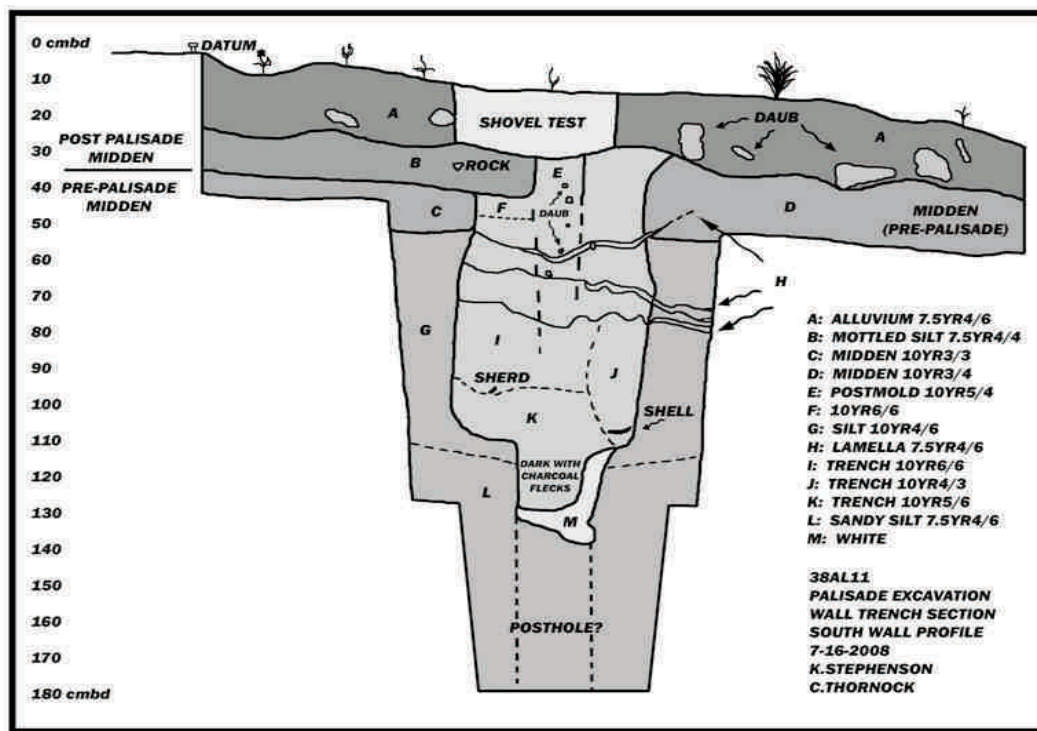


Fig. 6: Profile of the palisade trench feature at the Lawton site. (SCIAA drawing by Adam King)

rather than the midden having formed after the palisade was erected. Evidence for this inference lies in the fact that the midden on the interior side of the palisade had two layers, one consisting of mottled soil with artifacts overlying a more homogenous dark brown midden. The upper layer appears to be midden and subsoil excavated from the wall trench at the time of its construction. If the palisade had been planned and built at the time Lawton was first occupied, then the substrate backfill of the wall trench should be found below a homogenous artifact laden and organic rich midden.

In sum, daub concentrations that encircled the Lawton mound site on the interior edge of the fortification ditch were detected through systematic shovel testing and magnetometer survey. The dense concentrations of daub were indicative of a constructed log palisade plastered with clay, which eventually burned. Our recent excavations confirmed the presence of a palisade evidenced by postmolds or postholes set within a wall trench. Most

important is the fact that the wall trench appears to have been built after the site had been occupied for some time. By extension, the fortification ditch may also have been constructed after initial

occupation of the site.

It is generally assumed that palisade walls were constructed as fortifications designed to protect the occupants of Mississippian communities. Here at Lawton, it remains possible that both the palisade wall and associated ditch were built for just that purpose. By Mississippian mound town standards, Lawton is small. In excavations conducted there to date, we have found dense middens but little substantial architecture. Given this, there may not have been a significant, permanent population residing at Lawton to protect. It is possible that palisade walls and ditches like the ones at Lawton were built not so much to protect people within them as to define different

categories of space. At Mississippian sites ranging from the great Cahokia site near St. Louis to the Irene site at the mouth of the Savannah River, palisade walls were used to enclose mounds and open spaces and segregate them from the rest of the site. Perhaps the palisade wall and ditch at Lawton were created, at least in part, to define the mounded precinct as a distinct and important category of space to be kept separate from residential areas.

As yet, we do not understand the distribution of settlements associated with the Lawton site. It is clearly a small place that housed at best a small resident population. We expect that the rest of the people who viewed Lawton as a sacred and political center lived scattered across the uplands and floodplains around the site. In order to begin to understand the functions of Lawton's palisade and ditch, we need to understand more clearly how the site was used and how the people who used it distributed themselves on the landscape.

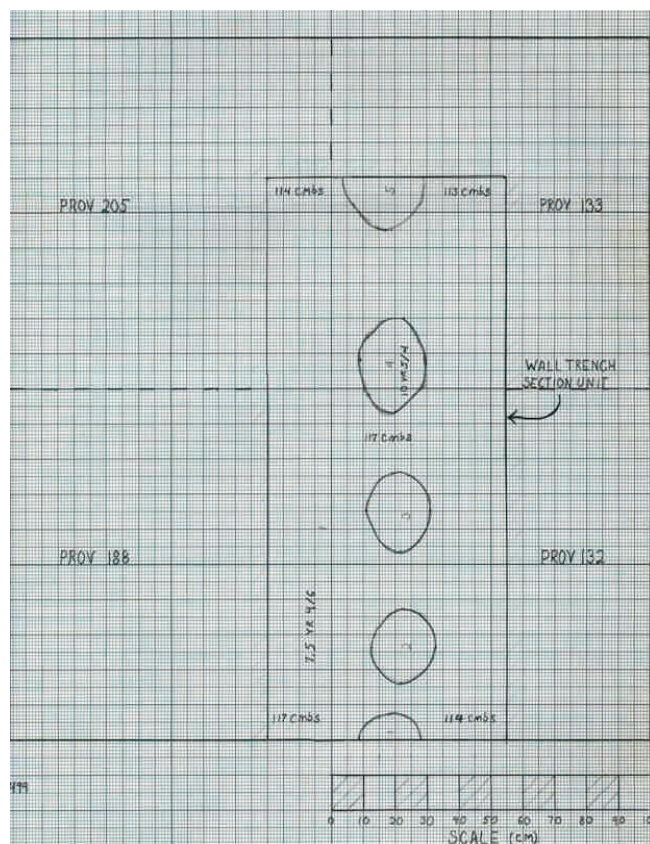


Fig. 7: Plan view of basal portions of palisade postholes at the Lawton site. (SCIAA drawing by Adam King)



# Stone Quarries and Sourcing in the South Carolina Slate Belt

By Christopher R. Moore



Quarry site with dense flake debris in Sumter National Forest. (Photo by Christopher Moore)

The Savannah River Archaeological Research Program (SRARP) is seeking information from local landowners and avocational archaeologists on the location of prehistoric metavolcanic and metasedimentary (also known as rhyolite and argillite) stone quarries in the South Carolina Slate Belt region. We are particularly interested in possible quarry sites in Saluda, Newberry, Lexington,

Fairfield, Richland, Chester, Kershaw, and Lancaster Counties. These sites often appear as dense scatters of large flakes and bifacial preforms in association with natural outcrops of rhyolitic flows, tuffs, breccias, and/or argillite or metamudstone. Finished projectile points at quarry sites are uncommon. With landowner permission,

samples of the material will be collected for geochemical analysis.

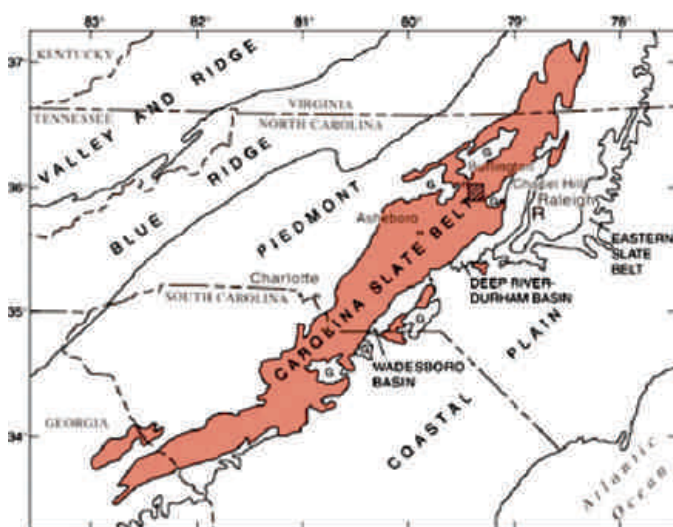
The purpose of this study is to determine the geological provenance and chemical signature of stone quarries for sourcing prehistoric artifacts to stone sources

throughout the Slate Belt. This work will compliment the research conducted on stone quarries in the North Carolina Slate Belt by Steponaitis et al. (2006) (<http://rla.unc.edu/Publications/pdf/ResRep25/>) and will enhance our understanding of hunter-gatherer settlement systems and technological organization in the South Carolina Piedmont and beyond.

If anyone has information on possible quarry sites, please contact Dr. Christopher R. Moore, [cmoore@srarp.org](mailto:cmoore@srarp.org), office: (803) 725-5227. This research is partially funded through the USC Educational Foundation. For more information, please contact Nena Powell Rice, [ricen@mailbox.sc.edu](mailto:ricen@mailbox.sc.edu), office: (803) 576-6573, cell: (803) 331-3431.

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Geologic map of the Slate Belt. (From William and Kover 1978)



Examples of quarry debris from Sumter National Forest. (Photo by Christopher Moore)

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# Jomon Period Research in West-Central Honshu, Japan

By J. Christopher Gillam, (Savannah River Archaeological Research Program), Junzo Uchiyama, Oki Nakamura, Tomohiko Matsumori, and Carlos Zeballos (Research Institute for Humanity and Nature, Kyoto, Japan)

The Jomon Period of Japan is best known for its fabulous array of pottery styles spanning nearly 14,000 years of time (ca. 16,500 to 2,400 calendar years before

fertility.

The Jomon Period can be broken down into six sub-periods based on pottery and lifestyle: the Incipient Jomon

(e.g. ducks), fishes (e.g. carp and salmon), and shellfish (e.g. clams and oysters) that were easily exploited from the shore, or by netting, trapping, and by canoe (Seguchi 2009). Their homes were typically small, circular (10-12 feet / three-four meters in diameter) semi-subterranean pit houses with floors dug a few feet (ca. one meter) beneath the surface of the ground and could house four to six people (although exceptionally large examples could hold many more). The houses contained excavated pits for storing food and other goods and often had central hearths for cooking and heat in winter months (Fig. 2). The walls and roof were thatched and anchored to wooden poles. Most archaeological sites contain four to five houses arranged in a circle and facing a small central plaza, often representing a small population of 30 to 40 people.

The Neolithisation and Modernisation of East Asian Inlands Seas (NEOMAP) project of the Research Institute for Humanity and Nature (RIHN), Kyoto, is exploring the development and change in prehistoric cultural landscapes throughout the region and beyond (Uchiyama 2009). Geographic research by the NEOMAP GIS research team (AKA G.I.S. Joes) is exploring the



Fig. 1: Jomon pottery from central Honshu, Japan. (Photo by Christopher Gillam)

present, CYBP). The term “jomon” literally means “cord-marked” reflecting the early and long-lasting tradition of using cord-impressed decorations on clay pots (Kobayashi 2004) that are very similar to later Woodland Period decorations here in eastern North America. However, Jomon pottery took on many forms over the millennia, from simple bowls and conical-based cord-marked forms to very complex flame-style pots (Fig. 1). These ranged in function from storage and cooking to ceremonial, and in addition to vessels the Jomon potters created clay figurines, Dogu, that represent fertility and other ceremonial forms (Kaner 2009). Dogu figurines take on such exotic forms that many UFO enthusiasts claim they represent extraterrestrial beings and cartoonists in Japan have portrayed them as living beings with special powers. However, these portrayals are fictional and fantasy, the real meaning of the figurines is much closer to humanity than their odd forms suggest, often representing human

(16,500-11,500 CYBP), Initial Jomon (11,500-7,000 CYBP), Early Jomon (7,000-5,500 CYBP), Middle Jomon (5,500-4,400 CYBP), Late Jomon (4,400-3,200 CYBP), and Final Jomon (3,200-2,400 CYBP).

The people of the Jomon period lived primarily as hunters, gatherers, and fishers. The land offered a variety of nuts, such as acorns and chestnuts, herbs, and seeds for gathering, and large game, such as boar and deer, for hunting. The waterways, lakes, and coastlines offered aquatic water-fowl



Fig. 2: Jomon pithouse features and shell midden. (Photo by Christopher Gillam)



shifting cultural and environmental setting of Jomon archaeological sites over time near Toyama Bay, the Hida Mountains, Lake Biwa, and other regions of west-central Honshu. Initial results from statistical and geographic analyses indicate that Jomon people lived in clustered settlement patterns throughout the region (Fig. 3), suggesting that frequent group interaction and multi-family organization was common. Frequent communication,

differences in settlement patterns along the sea coast, lowland plains, mountains, and lake shore settings of central Honshu (Gillam et al. 2010; Nakamura and Matsumori 2009), and the significance of trade and interaction between these various groups (Bausch 2004). Geographic models of trade networks across the landscape are illustrating possible trails used by Jomon people thousands of years ago for the exchange of raw and finished

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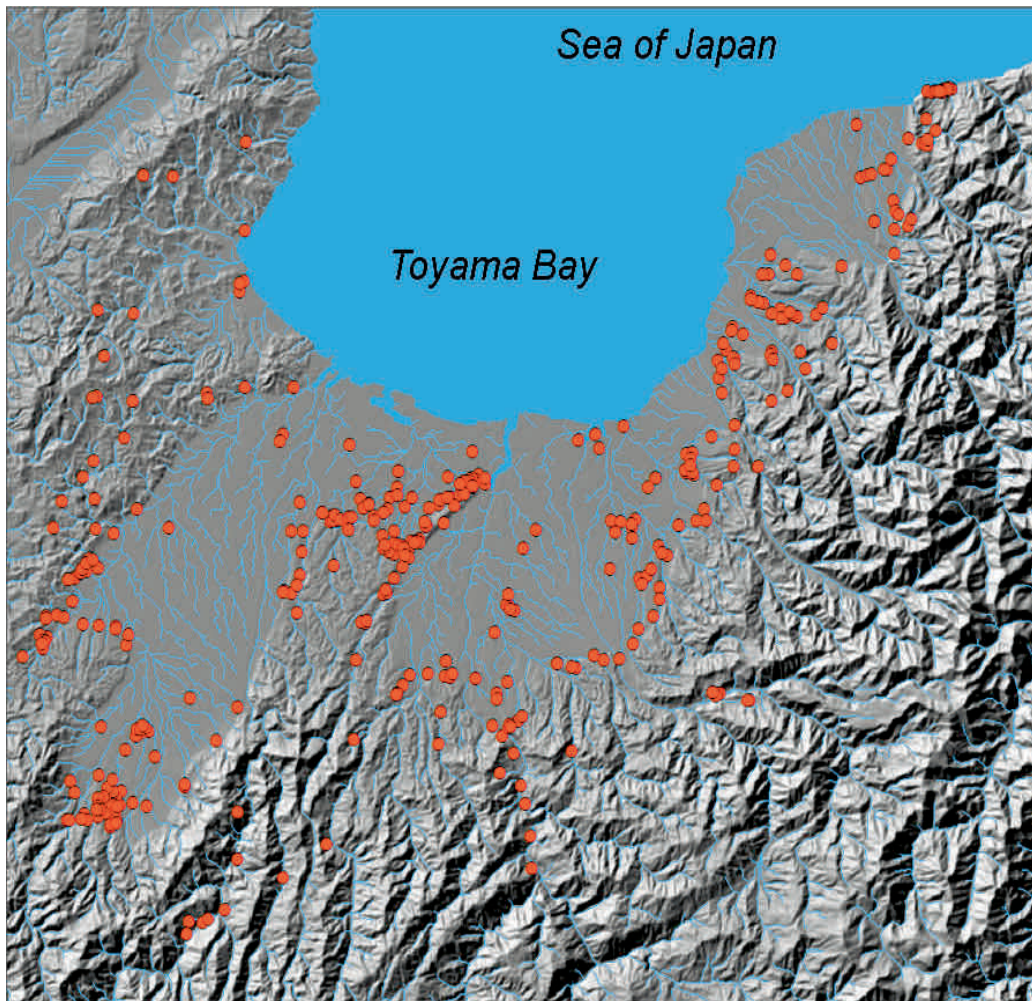


Fig. 3: Middle Jomon site clusters near Toyama Bay. (Drawing by Christopher Gillam)

exchange of goods, and close-kinship ties between settlements likely ensured the long-term success of small local populations (ca. 30 to 100 people).

Near Toyama Bay in Toyama Prefecture, the geographic center of settlement migrated north eastward from the mountain-plains interface onto the fertile lowland plains, this may suggest a shift from hunting and gathering to horticulture over time (Gillam 2009). Current research is examining the

materials, such as jadeite and obsidian, and local foods, such as fish and venison. After more than four years of background research and extensive data development by an international team of scholars, the NEOMAP project is shedding new light on the development of complex prehistoric cultures throughout East Asia.

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# SCIAA and USC to Present 2<sup>nd</sup> Annual Postdoctoral Conference to Discuss Long-Term Human-Environmental Interactions: 'From Field to Table'

By David Goldstein

As we complete the first decade of the 21<sup>st</sup> Century, our nation, together with many others, is confronted with an increasing amount of information indicating that the climate, and other ecological systems that we depend on, are changing dramatically. While there are many questions regarding the scale of these changes and their potential impacts, SCIAA is hosting a conference that looks to the past to see how humans have dealt with ecological change in the past. During the weekend of March 18-21, 2010, SCIAA and USC will host *From Field to Table: Historical Ecology of Regional Subsistence Strategies*, the Second Annual SCIAA Postdoctoral Visiting Scholar Conference. The main theme of the program is to debate and present different ways to investigate, detect, and potentially measure the impacts of human societies in South Carolina and the world.

The conference relies on a developing perspective called Historical Ecology that is an intersection between the natural and social sciences. Environmental history, historical geography, and cultural ecology, are all ways that academics have framed their research in the past. Historical Ecology, with its foundations in the 1980s, is a synthetic approach in archaeology of these different research areas. Historical

ecologists tend to look at how humans impact landscapes and their ecosystems locally and regionally. The approach is to use, working from modern ethnography and documents, historical data to inform how we design and carry out

use pollen and ancient animal remains, also called proxies, taken from settlements along the South Carolina coastline over a 500-year period to look at the impacts of settlement and farming practices on the local environment. These projects allow us to compare and correlate change through

the use of the long-term environmental records across many different parts of the world to develop ideas of how different populations have dealt differently with similar circumstances.

For the conference, we have invited Dr. Carole Crumley, University of North Carolina-Chapel Hill, to be the discussant of the papers of 25 participants. Dr. Crumley has been at the forefront of Historical Ecology research for over 35 years, and has been applying these methods on her project that examines nearly 5,000 years of landscape use in Northern Burgundy in France. This project is one of the longest running Historical Ecology projects in the world, and offers a model for the kinds of work that can be done elsewhere when archaeologists make extended commitments to research areas. Dr. Crumley's work has gained international recognition and resulted in her present two-year term as the head of the Stockholm Resilience

Center, a non-governmental organization dedicated to setting and advising international policy on sustainable resource use. As a result, Dr. Crumley, as an anthropologist, archaeologist, and



From 'Field to Table' Conference poster. (Poster by David Goldstein)

our archaeological fieldwork. All of our excavations incorporate the collection of environmental data that helps us apply the archaeological data to long-term series of ecological change. For instance, we might

climate historian, continues to make local and global contributions to how societies plan for ecological change and integrate historical components into decision-making processes.

The conference program is unique, as it will bring together a range of participants from the most senior scholars to Ph.D. candidates and recent program graduates to promote open dialogue, something that a small conference can easily support. SCIAA also will use this opportunity to highlight relevant archaeological research at USC and other regional institutions. For instance, Dr. Jennifer Pournelle from the USC-School of the Environment will present her research group's work, together with Dr. Carrie Hritz (The Pennsylvania State University) that reevaluates political organization as a driving force behind water system production in Ancient Mesopotamia. Their work represents a cutting edge geographical rewriting of a long held paradigm where centralization of water control was held up as the main reason for the evolution of state government. They present new data defining receding swampland and increased upland flooding as main drivers in development of social complexity.

Dr. Sarah Quick (Winthrop College) will discuss the relationship between long-term rice cultivation on both the communities of the region and the developing organic foods market for enduring South Carolina rice varieties. Lisa Randle (Ph.D. Candidate USC-Anthropology) will present some of her dissertation work that looks at the history of plantation landscapes and the impact

of different social dynamics on long-term resource use from the early colonial period to the present in plantation systems.

Chris Judge (Ph.D. Candidate USC-Instructor at USC-Lancaster and Columbia) will have an opportunity to explore his long-term research at the Kolb site from the perspective of landscape change and resource use, and present a



Chester DePratter and James Legg excavating a test unit in the marsh behind Litchfield Beach, SC as part of David Goldstein's Postdoctoral Visting Scholar Program. (Photo by David Goldstein)

fresh perspective on the site. Again, the goal of this conference is to bring long-term senior scholars working in Historical Ecology into contact with our regional scholars who are following similar research agendas.

Many of these senior scholars are now installed in high profile institutional initiatives that recast traditional archaeological research within a Historical Ecology agenda. For instance, Dr. Kate Spielmann (Arizona State University-

School of Environment and Social Change) will present her recent work on the environmental effects of shifting Pueblo Indian subsistence to an extractive colonial economy under Spanish direction in the 17<sup>th</sup> century. Christopher Götz (Autonomous University of the Yucatán, Mexico) will discuss the long-term effects of hunting and cultivation strategies of the ancient Maya on modern mammal biodiversity in the region. Dr. Victor Thompson (Ohio State University) will discuss his long-term research on the impacts of long-term food production on the Georgia coastline under indigenous cultivation and the legacy landscape that European colonizers encountered in the 17<sup>th</sup> and 18<sup>th</sup> centuries. All of these different approaches and their foci are directed to highlighting the substantial role that archaeological data can play in the national and international dialogue on setting policy and understanding where humans fit into natural systems historically. From the point of view of Historical Ecology, as a methodological and theoretical approach, this agenda has been sorely neglected in the past.

The presentation portion of the symposium will take place on Friday March 19<sup>th</sup>, and will be open to the general public with presentations from 9:00 AM to 4:00 PM at the Inn at USC. The workshop portion will

be open to participants and USC students only as it is a workshop with only limited space available. Results of the conference will be produced as a volume presented by the USC Press, with a projected printing date of Spring 2011. If there are any questions about the conference or inquiries about participation, please contact Dr. David Goldstein at SCIAA, (803) 576-6571, or via electronic mail: [goldsted@sc.mailbox.edu](mailto:goldsted@sc.mailbox.edu).



# Research

## Finding Sergeant York

By James B. Legg

In April 2009, I participated in the third and latest field season of the Sergeant York Project in the Argonne Forest in northern France. I have often visited the Western Front, but have never had the opportunity to work there. As a battlefield archaeologist and a serious student of the Great War, I was very pleased that I could finally combine those interests in a field project.

Dr. Thomas Nolan, a historical geographer at Middle Tennessee State University, created the Sergeant York Project. His goal was to locate and interpret the particular site of Alvin York's Medal of Honor action, on October 8, 1918 (see *Legend of Sergeant York*, page 22). Nolan used a combination of historical research, his GIS expertise, and archaeology to convincingly demonstrate the location. Field seasons in March and November 2006, yielded a distribution of artifacts that clearly match the details of

the York action. The site is in a part of the Argonne Forest that was not otherwise fought over, allowing a degree of archaeological clarity that would be difficult or impossible to find in most areas of the Western Front. The York project was the topic of Nolan's Texas State University dissertation submitted in 2007

(see *Further Reading*, p. 21).

By mid-2008, controversy was brewing. A second "York location" project claimed an entirely different site, some 500 meters north of Nolan's site (see *Further Reading*, p. 21). The other project was clearly *not* in the correct location, but their findings received credulous press coverage. They maintained an attractive and convincing web site, and they ultimately erected a monument and prepared a walking trail on the non-site!



Fig. 2: Tom Nolan (left) and Brad Posey with a freshly recovered German mess kit. (Photo by James Legg)

Brad Posey, an American military historian and expert metal detector technician living in Germany, convinced Tom Nolan that an additional field season might add weight to his under-publicized case. Posey had examined the methods and claims of both projects, and he conducted extensive historical research in both U. S. and German archives, including much material that neither York project had utilized. Nolan applied for a new archaeological permit, and after considerable delay in scheduling, he set the dates for his third field season as April 7-17, 2009. I was invited to participate as the project "battlefield archaeologist," although that was essentially what everyone would be doing. I had seen both sites and had studied the historical record, and I knew I wanted to be involved.

I flew into the Frankfurt airport on the morning of April 6, 2009, and was met by my old friend Brad Posey, whose car was heavily laden with field gear and supplies. A few hours later we were on the Meuse-Argonne battlefield, and we checked into a large rental house that Tom Nolan had reserved in the village of Fleville, a few kilometers east of the York site. The project team that assembled there included individuals from the U.S., Germany, France, Britain, and the Netherlands. Project oversight and heavy equipment were provided by Yves DesFossés the regional archaeologist



Fig 1: A view from near the village of Chatel-Chéhéry, southwest toward the Argonne Forest. The York action took place in the valley between the two wooded ridges. The scene of the 328<sup>th</sup> Infantry attack is out of the picture to the right. (Photo by James Legg)



for Champagne-Ardenne. Yves is a Celtic specialist who has developed a strong interest in Great War archaeology (see *Further Reading*, p. 21).

We began work on the morning of April 7, 2009, and worked through the next 11 days with lab work and analysis in the evenings. There were two major goals. First, we wanted to repeat the metal detector survey of the site and expand its boundaries. While he had recorded hundreds of artifacts, Tom Nolan was concerned that the metal detecting in the first two brief seasons was too hurried and unsystematic, and that much material had been overlooked (he was correct). Second, we wanted to locate evidence of the temporary burials of the six Americans of York's patrol who were killed during the action. Five of the six burials were reasonably located in U. S. graves registration records, and the earlier metal detecting had found artifacts probably related to the sixth individual. The grave search would involve metal detecting, hand excavation, and mechanical stripping.

The intensive metal detector coverage continued throughout the project, with as many as five experienced detector operators working at a time. We strived for 100%, systematic coverage within our search areas, and also conducted

reconnaissance searches of adjacent landforms. Each artifact was bagged and marked with a provenience number, and it was then collected and replaced with a pin flag bearing the same number. The pin flag locations were later recorded using a survey-grade GPS unit—or at least that was the intention. The narrow valley where the York action took place was defined by very steep hillsides covered with hardwood forest. Tom Nolan knew from previous experience that he would have difficulty recording hundreds of long, reliable GPS readings in such terrain, and he had arranged with a French contractor to provide relay equipment that would solve the problem. There was some sort of compatibility problem with this solution, however, and we had to resort to primitive technology. We set a series of datum stakes across the site, which were recorded with hard-won GPS readings, and then mapped dozens of artifacts from each stake using compass and tape.

The collection derived from the metal detecting was huge, and like the 2006 collections, its distribution fit remarkably well with the events of October 8, 1918. Through most of the valley, and on the hill slope to the north, there was



Fig. 4: French Great War archaeologist Yves DesFossés pondering some mechanical stripping. (Photo by James Legg)

very little WWI material, reflecting the fact that there was no other combat in the immediate vicinity. In the area where we think the German prisoners were clustered, there was a well-defined mass of German material including hundreds of unfired 7.92mm rifle cartridges, stick grenades, gas mask components, mess equipment, entrenching tools, personal items, etc. This was consistent with the POWs abandoning their weapons and equipment, and it suggested the extent of the loose perimeter formed by their outnumbered American captors. The postulated American perimeter included a scatter of impacted German rifle/machinegun bullets, as well as very strong evidence for all of the temporary American burials. Up the steep, wooded slope to the east of the POW cluster, we found abundant evidence for the other German force, the machine gunners and riflemen who were engaged and ultimately defeated by Alvin York. Finally, at the base of the slope, between the German POWs and the upslope Germans who put up a fight, we found a small scatter of U. S. .45 ACP pistol and .30"06 rifle cartridge cases



Fig. 3: James Legg recovering German rifle cartridges. (Photo courtesy of James Legg)





Fig. 5: The artifact lab/dining room in our house in Fleville. (Photo by James Legg)

that were probably fired by Alvin York.

The first of the probable grave locations we examined is likely that of Corporal Murray Savage, a friend of Alvin York, whom York saw riddled with machinegun bullets. His remains were removed in 1921. A 1919 photo shows Savage's field grave cut into the base of a slope, and covered with equipment including his rifle, cartridge belt, and canteen cover. In 2006, metal detecting located artifacts including the remains of a U. S. cartridge belt and 70 unfired .30'06 cartridges, canteen cover hardware, and a U. S. helmet at such a location, very near where we think York was positioned during the action. I excavated a 1 X 2-meter unit at this spot in the hope of finding some evidence of the grave pit. I found additional web gear hardware, U. S. helmet liner parts, and the sole of a U. S. hobnailed shoe, but no indication of a soil feature. Yves DesFossés then directed the stripping of a larger area using a backhoe, still without success. We agreed that the color and character of the soil were such

that a shallow, backfilled excavation might be difficult or impossible to detect. Not far from the probable Savage grave, we found an American pocket watch—the opening of the watchcase that evening was attended with much excitement, but it was,



Fig. 6: Artifact processing—these German artifacts include cartridges, gas mask parts, stick grenades, and a shovel. (Photo by James Legg)

alas, not engraved.

Corporal Savage's grave was incorrectly plotted in the graves registration records, which placed it

nowhere near either "York location," yet we know that he fell by York and was buried there. The other two grave locations appear to have been accurately plotted, including a row of four burials (Privates Dymowski, Swanson, Wareing, and Weiler), and the isolated grave of Private Wine. Both localities are on the opposite (west) side of the American perimeter around the POWs, on the west side of the creek. The plotted vicinity of the four-man grave (removed in 1919) yielded a well-defined cluster of U. S. artifacts in both 2006 and 2009. These included a helmet, web equipment hardware, unfired rifle ammunition, mess utensils, a pocketknife, an opened bandage can, a uniform button, and a collar insignia for "G" Company, 328<sup>th</sup> Infantry Regiment. A 1919 photo of the four graves includes distant terrain details of the west slope of the valley, and these match the view from the location of the U. S. artifact cluster (the photo also shows that at least three of the graves are marked with helmets in

addition to crosses). A shallow depression is readily apparent at the probable grave location. Unfortunately, a large tree is centered in the depression, and with the limited time available we did not undertake the difficult hand excavation that would have been required to investigate it. Yves DesFossés stripped the topsoil from several trenches around the depression, but we detected no grave feature. Private Wine's solitary grave was not photographed, but its location is well described in the records, and when Wine was removed in 1921, its depth was given as one foot. At approximately the plotted location of Wine's grave, metal detecting yielded a U.S. mess knife and spoon, the knife marked "G/328," in a cluster of small trees. Subsequent mechanical stripping by Yves DesFossés uncovered the missing fork from the set, as well as portions of a U. S. helmet liner.



Given the tree cover and the depth of the original grave, it is not surprising that we did not detect a grave stain.

While the results of the various grave investigations were not as clear cut as we had hoped, I am firmly convinced that we have located the three documented burial sites. I should emphasize that the U. S. artifacts discussed in this context are not “cherry-picked” from a broad scatter of American material. With the exception of ammunition specimens, these “grave”

landscape and the archaeological data.

### Acknowledgements

*I agreed to participate in the 2009 York project as a volunteer, at my own expense, but in the end, my costs were substantially covered by the contributions or considerations of Charlie Cobb, Stan South, Rebecca Barrera, Brad Posey, Birgit Anderson, Michael Kelly, and Tom Nolan. All are warmly thanked.*



Fig. 7: The site of Alvin York's action—a view to the northeast from the creek in the middle of the valley. The German prisoners were gathered in the foreground; York was located at the base of the slope, firing uphill. The site was much more overgrown in 1918. (Photo by James Legg)

artifacts comprise the American collection, and they are indeed clustered in three tight locations. Those locations fit well with the historical narrative of the York action, with the pattern of the general artifact distribution, and, in two cases, with the locations recorded in 1919 and 1921. After some 32 years of working in historical archaeology, I am accustomed to seeing, at best, an ambiguous agreement between the historical record and the archaeological evidence on a site. In this case, the very detailed and well-supported participant narratives of the York action fit astonishingly well with the current

### Further Reading...

Tom Nolan's 2007 dissertation, "*Battlefield Landscapes: Geographic Information Science as a Method of Integrating History and Archaeology for Battlefield Interpretation*" is available online at <http://ecommons.txstate.edu/geogtad/5/>. Until the 2009 field work and additional historical research are reflected in a new report, this is the best single source for the site, its history, and its archaeology. Details will change, but the original work is basically sound. The website for the Sergeant York Project is at <http://www.sergeantyorkproject.com>. The site is

currently undergoing an overdue update and expansion. Michael Kelly's *Sergeant York of the Argonne Tour Guide* (Ennogra Forest Publications, 2008) is a useful field guide to the York site and numerous other Meuse-Argonne locations. Michael is a British Western Front historian and a professional battlefield guide who has supported and participated in both the 2006 and 2009 York field projects. David Lee's *Sergeant York: An American Hero* (University Press of Kentucky, 1985) is

a good scholarly biography of Alvin York and his legend. Lee's map of the York action is inaccurate, however. Edward Lengel's *To Conquer Hell: The Meuse-Argonne, 1918* (Henry Holt and Co., 2008) is a long-awaited full narrative of the near-fiasco that was America's greatest battle before Normandy in 1944. This is one of the best military histories I have read. French archaeologists Yves DesFossés, Alain Jaques, and Gilles Prilaux have written a heavily illustrated survey of the new field of Western Front archaeology, published in English as *Great War Archaeology* (INRAP, Editions Ouest France, 2009). This remarkable book includes a discussion of the 2006 York field work. Finally, it should be obvious that I

am entirely convinced of the correctness of the York locality that I worked on. In the interest

of fairness, however, I will record that the website and online report of the “other” York project can be found at <http://www.sgttyorkdiscovery.com/>. This can be convincing material for the uninitiated. Be sure to contrast it with a careful reading of Tom Nolan's dissertation. It is *my opinion* that the “other” project was well intentioned, but amounted to an unsystematic, unprovenanced, and unauthorized relic hunt on the battlefield of the main 328<sup>th</sup> attack on October 8, 1918, (where, of course, there were thousands of American and German artifacts).



# The Legend of Sergeant York

By James B. Legg

Corporal Alvin York began the morning of October 8, 1918, as a fairly ordinary draftee soldier in "G" Company, 328<sup>th</sup> Infantry Regiment, 82<sup>nd</sup> Division, American Expeditionary Force. He was a humble, born-again Christian, farmer, and hunter from the Tennessee mountains, a remarkably good shot, and a one-time conscientious objector. By the afternoon of October 8, he was well on his way into the realm of warrior legend.

York's unit was engaged in the great Meuse-Argonne Offensive, the largest and final American offensive of the war. The Meuse-Argonne lasted from September 26, 1918 until the end of the war on November 11. Approximately 1.2 million Americans participated, of whom about 27,000 were killed and 96,000 were wounded, gassed or otherwise disabled. The left flank of the offensive faced German defenses in the Argonne Forest, a dense, dark woodland covering a range of steep hills with narrow valleys. On October 8 the 328<sup>th</sup> Infantry Regiment of the 82<sup>nd</sup> attacked westward, over open ground, toward the eastern edge of the Argonne Forest. The German defenders held high ground inside the forest both straight ahead (west), and to the left flank (south) of the 328<sup>th</sup> attack. Numerous German machineguns firing from both directions inflicted heavy casualties on the Americans, and the attackers were pinned down several hundred meters short of the forest. A patrol of men from "G" Company was quickly organized and tasked with neutralizing the machineguns firing from a wooded ridge to the south. The patrol was commanded by Sergeant Bernard Early, and totaled 17 men, including Alvin York. Early led his men to the rear, away from the attack, and then turned south and west. They managed to infiltrate into the Argonne Forest at a point that was not defended by the Germans, and they proceeded deep into the German rear,

intending to attack the machineguns from behind. Early's patrol climbed down a steep slope into a narrow, overgrown valley bisected by a small creek; the valley pointed north, toward the 328<sup>th</sup> attack. Moving up the valley toward the sound of the German machineguns, the Americans suddenly encountered a group of several dozen Germans resting and eating breakfast between the creek and the base of the eastern slope. The Germans were completely surprised and quickly surrendered, and Early arranged his outnumbered men to form a perimeter around the POWs. Suddenly a heavy fire opened from additional Germans positioned up on the eastern slope—six



Sergeant Alvin York in 1919. (U. S. Army photo)

Americans were killed, three others were wounded, including Early. The survivors were pinned down in the valley, along with their prisoners.

Corporal Alvin York was now in command of the remains of the Early patrol, but he did his own fighting. From his position between the POWs and the enemy force on the hillside above him, York began shooting individual Germans

in the head with his rifle, whenever they attempted to take aim at himself or other Americans. While York was heavily outgunned, the Germans were actually in a difficult position, as York's location at the base of the steep slope required them to expose themselves in order to fire effectively. They were not able to simply blaze away with rifles and machineguns in York's general direction, as he was positioned in front of a large mass of prone POWs. Recognizing the problem, a German officer led five men in a rush to kill York while he was reloading his rifle. York shot all six Germans with his .45 automatic pistol. Ultimately, the surviving Germans on the slope joined the POWs in the valley. York organized the prisoners into a column and marched them out, capturing still more groups before he reached friendly positions. The

official prisoner total was 132, and York was credited with killing 25 Germans. The 328<sup>th</sup> attack, meanwhile, was successful.

York was promoted to Sergeant, but much more was to come. An official investigation of the action in the valley led to a Medal of Honor and a blaze of publicity in 1919. "Sergeant York" was a national hero and a household name in the years after the Great War. In 1941, Warner Brothers released "Sergeant York," starring Gary Cooper, a popular patriotic morality tale with only tenuous connections to the facts. The movie revived York's fame, and he was still well known

among Americans when he died in 1964. Like the Great War itself, Alvin York has since begun the long slide into oblivion, forgotten or only vaguely recognized by most Americans today. His legend, at least, was one well-grounded in reality. He was real, and he really did what they say he did in that remote ravine in the Argonne Forest.

# Maritime Research

## Ashley Deming Takes Reins Of Sport Diver Program

By Carl Naylor

As of the beginning of January, Ashley M. Deming has taken over the reins of the Sport Diver Archaeology Management Program (SDAMP), replacing Lora Holland who has left South Carolina to pursue her interests (professional and otherwise) in San Francisco. As head of SDAMP, Ashley will also manage the Charleston office of SCIAA's Maritime Research Division.

Ashley, a native of Grand Ledge, Michigan, arrives in South Carolina fresh from the University of Bristol (that's in England) where she earned a Master's Degree in Maritime Archaeology and History. Her studies at the University of Bristol included an underwater archaeology field school on Tortola, British Virgin Islands, participating in the recording of two shipwrecks in Road Harbor.

While in England she also worked as an Education and Marketing Volunteer on the SS *Great Britain*. Prior to that, she worked as an Education and Outreach Specialist at Thunder Bay National Marine Sanctuary in Alpena, Michigan. She is also a member of the Phi Beta Kappa honors fraternity.

Ashley did her undergraduate studies at Western Michigan University, receiving a degree in anthropology with a minor in geology. As an undergraduate, she completed a terrestrial archaeology field school on Barbados, where she participated in excavations of Jubilee Gardens in Bridgetown. Her achievements while an undergraduate include a Medallion Scholarship and the 2005/2006 College of Arts and Science Undergraduate Research and Creative Activities Award. While a student at Western Michigan University she also spent a semester studying archaeology and geology at the University of Edinburgh, Scotland.

Since beginning her new position in January, Ashley has been busy

revamping the Sport Diver Program and will soon announce a new line up of talks, seminars, training courses, and avocational projects for both sport divers and anyone interested in maritime archaeology. These announcements will be made in future issues of *Legacy* and in an e-newsletter sent out through SDAMP's list of email addresses.

"I hope to bring a better appreciation of maritime archaeology to the public and a better understanding of what we do as maritime archaeologists in South Carolina," she said. "I also want to make sport divers and the public more aware of how they can contribute to the goals of the Sport Diver Program and their role in protecting their state's heritage."

SDAMP, an outgrowth of the South Carolina Underwater Antiquities Act of 1991, functions as a connection between the sport diver community and professional archaeologists. Through its education efforts SDAMP shares archaeological principles with interested members of the public, both divers and non-divers. In addition, SDAMP issues and monitors South Carolina Hobby Diver Licenses. These licenses

allow divers to collect artifacts and fossils from state waters on a recreational, non-commercial basis, provided the licensees report the items and the location of their finds. The information received from the licensed divers aids us in monitoring the roughly eight hundred submerged archaeological sites in state waters and in learning of new sites that can be recorded into the state's inventory of archaeological sites.

To arrange a talk or to get your name on the email list, contact Ashley at the Charleston Office (843-762-6105) or online at [deminga@mailbox.sc.edu](mailto:deminga@mailbox.sc.edu).



Ashley Deming. (Photo by Carl Naylor)



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*Newsweek*, April 26, 1999

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*New York Times*, June 29, 2004

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nrice@sc.edu or ricen@mailbox.sc.edu

{ **America Before the Indians**  
*New Discoveries Are Rewriting Our History*

*U.S. News & World Report*, October 12, 1998

**State  
archeologists  
uncover latest  
addition to  
Revolutionary  
War Trail**

*The Beaufort Gazette*, April 9, 2005

**History  
made at  
ancient  
landing**

*Carolina Mornings News*,  
September 22, 2004

**Hunt begins off S.C.  
for Spanish galleon**

*Search is part of larger  
effort to map shipwrecks*  
*The State*, August 10, 2005

**Civil War—era  
cannons to be  
raised from  
Pee Dee**

*Morning News*, Florence, SC,  
March 18, 2009

# Join the 2010 Allendale Paleoamerican Expedition May 3-June 5, 2010: In the Savannah River Valley of Allendale County, South Carolina

Calling for volunteers from the public, no experience necessary, to sign up for a week or more to help excavate ancient archaeological sites associated with prehistoric chert quarries. In 2010, the Expedition will continue exploring the Clovis and preClovis occupations at the Topper Site. Volunteers learn excavation techniques and artifact identification. The Expedition also provides a good excavation experience for undergraduate and graduate students. The cost is \$466 per week (\$400 is tax-deductible). Pre-registration is \$60 per week. The final payment is due by April 15, 2010.

## Registrations starts January 1, 2010

- Free camping with hot showers at the site
- Lunch and evening meals provided
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- Paleoamerican book and T-shirt
- Motels within 30 minutes

- I. May 3-8
- II. May 10-15
- III. May 17-22
- IV. May 24-29
- V. May 31-June 5

To pre-register and reserve a place, please send a non-refundable \$60 check, payable to USC Educational Foundation, to Dr. Al Goodyear at the SC Institute of Archaeology and Anthropology, University of South Carolina, 1321 Pendleton Street, Columbia, SC 29208 (803-576-6579). Email inquiries to [goodyear@sc.edu](mailto:goodyear@sc.edu). Please indicate which week or weeks

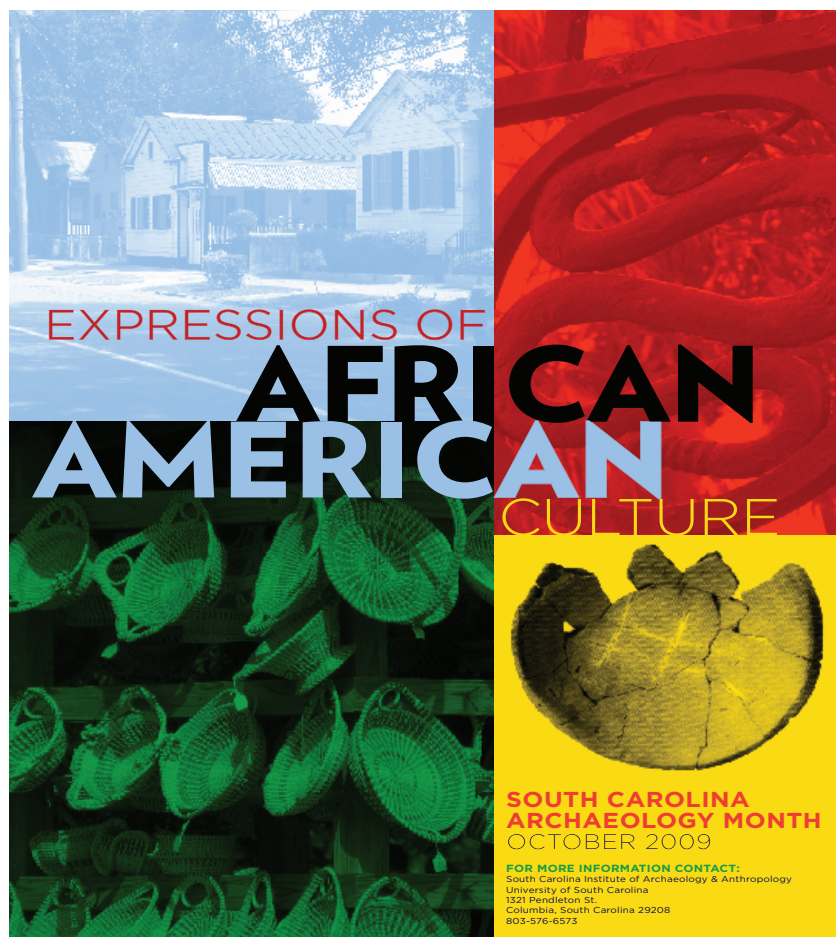
## Georgia Archaeology Month 2010

By Tammy Forehand Herron

May 2010 marks the 17<sup>th</sup> Annual *Archaeology Awareness* promotion in Georgia. From its inception as a weeklong celebration in 1994, the observance has expanded to an entire month of special public events, exhibits, and demonstrations in communities across the state. This year's theme, *Making the Past Come to Life! Exploring Ancient Techniques*, will focus on the study of primitive technology. The program for the annual spring meeting of the Society for Georgia Archaeology (SGA) will feature outdoor demonstrations by modern-day craftsmen, such as flintknappers, potters, basket makers, and weavers, who practice olden-day techniques in order to bring the ways of the past to life.

So, please **SAVE THE DATE** and join us for the spring meeting of the Society for Georgia Archaeology, principal sponsor of Georgia Archaeology Month, to be held Saturday, May 15, 2010, at The Parks at Chehaw near Albany, Georgia. See the SGA website at [www.thesga.org](http://www.thesga.org). You may also contact Tammy Forehand Herron at [forehand@sc.edu](mailto:forehand@sc.edu) or (803) 725-5259 for further information.

## South Carolina Archaeology Month Poster 2009



There are 2009 posters still available to be picked up at the SC Institute of Archaeology and Anthropology, 1321 Pendleton Street, Columbia, SC (Poster designed by Brockington & Associates)